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| 10/660,297      | 09/10/2003   | Gary A. Gibson       | 200310982-1         | 5476             |

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EXAMINER

BHAT, ADITYA S

ART UNIT PAPER NUMBER

2863

DATE MAILED: 11/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/660,297

Applicant(s)

GIBSON ET AL.

Examiner

Aditya S. Bhat

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 19 August 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10, 13-19 and 21-24 is/are rejected.
- 7) ☒ Claim(s) 11, 12 and 20 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date. _____  | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-10, 13-19, and 21-24 are rejected under 35 U.S.C. 102(b) as being anticipated by Fujiwara et al. (USPN 5,777,977).

With regards to claim 1, Fujiwara et al. (USPN 5,777,977) teaches a data storage device comprising:

a probe tip mounted on a suspension mechanism; (21-22;Figure 4)

a data storage layer; (Col. 5, lines 35-37)

at least one conducting layer wherein a capacitance is formed between the suspension mechanism and the at least one conducting layer; (Col. 9, lines 52-55) and

a sensor for sensing a change in the capacitance based on a displacement of the probe tip due to the presence of a bit. (Col. 13, lines 9-19)

With regards to claim 2, Fujiwara et al. (USPN 5,777,977) teaches the data storage layer is in contact with the probe tip. (10;Figure 4)

With regards to claim 3 and 22, Fujiwara et al. (USPN 5,777,977) teaches the data storage layer includes the bit and the bit comprises at least one of a pit or protrusion (Col. 42,lines 43-44)

With regards to claim 4, Fujiwara et al. (USPN 5,777,977) teaches the data storage layer comprises a polymer material. (Col.19, lines 32-34)

With regards to claim 5, Fujiwara et al. (USPN 5,777,977) teaches the conducting layer comprises a conducting thin film. (Col. 19,lines 41-42)

With regards to claim 6, Fujiwara et al. (USPN 5,777,977) teaches the conducting thin film comprises at least one of a deposited metal film of Mo, Cu, TA and an alloy. (Col.19, lines 46-47)

With regards to claim 7, Fujiwara et al. (USPN 5,777,977) teaches the conducting layer comprises a conducting substrate. (11;Col. 13, line 38-39)

With regards to claim 8, Fujiwara et al. (USPN 5,777,977) teaches the conducting substrate comprises a doped silicon material. (Col. 13, line 35-40)

With regards to claim 9, Fujiwara et al. (USPN 5,777,977) teaches the suspension mechanism includes a flexible cantilever. (22;Figure 4)

With regards to claim 13, Fujiwara et al. (USPN 5,777,977) teaches a method of reading data from a data storage device comprising:

suspending a probe tip over a data storage layer via a suspension mechanism;  
(21-22;Figure 4)

providing at least one conducting layer wherein a capacitance is formed between the suspension mechanism and the at least one conducting layer; (Col. 9, lines 52-55)  
and

sensing a change in the capacitance based on a displacement of the probe tip due to the presence of a bit. (Col. 13, lines 9-19)

With regards to claim 19, Fujiwara et al. (USPN 5,777,977) teaches a the suspension mechanism further includes a flexible cantilever and the act of providing at least one conducting layer further comprises providing a conducting layer within the suspension mechanism whereby a capacitance is formed between the conducting layer and the flexible cantilever. (figure 4)

With regards to claim 21, Fujiwara et al. (USPN 5,777,977) teaches the act of sensing a change in capacitance comprises sensing a difference in capacitance between the first and second capacitance. (Col. 13, lines 12-15)

With regards to claim 23, Fujiwara et al. (USPN 5,777,977) teaches a computer system comprising:

- a central processing unit; and a data storage device coupled to the central processing unit comprising: (147;Col.10, line 26)

- a probe tip mounted on a suspension mechanism; (21-22;figure 4)

- a data storage layer; (Col. 5, lines 35-37)

- at least one conducting layer wherein a capacitance is formed between the suspension mechanism and the at test one conducting layer; (Col. 9, lines 52-55) and

- a sensor for sensing a change in the capacitance based on a displacement of the probe tip due to the presence of a bit. (Col. 13, lines 9-19)

With regards to claim 24, Fujiwara et al. (USPN 5,777,977) teaches a data storage device comprising:

- a probe tip mounted on a flexible suspension mechanism; (21-22;figure 4)

- at least one capacitor coupled to the flexible suspension; (Col. 5, lines 52-55) and

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a sensor for sensing a change in capacitance of the at least one capacitor based on a displacement of the probe tip due to the presence of a bit (Col. 13, lines 9-19)

***Allowable Subject Matter***

The following is a statement of reasons for the indication of allowable subject matter: Claims 11-12 and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding claims 11-12 and 20:

The primary reason for the allowance of claim 11 is the inclusion of: a first capacitance is formed on a first side of the flexible cantilever and a second capacitance is formed on a second side of the flexible cantilever. It is this feature found in the claim, as they are claimed in the combination that has not been found, taught or suggested by the prior art of record, which makes this claim allowable over the prior art.

The primary reason for the allowance of claim 20 is the inclusion of the method steps of: the suspension mechanism further includes a flexible cantilever and the act of providing at least one conducting layer includes providing a first conducting layer on a first side of the flexible cantilever and a second conducting layer on a second side of the flexible cantilever wherein a first capacitance is formed on the first side of the flexible cantilever and a second capacitance is formed on the second side of the flexible cantilever. It is this feature found in the claim, as it is claimed in the combination that has not been found, taught or suggested by the prior art of record, which makes this claim allowable over the prior art.

Claim 12 is allowed due to its dependency on claim 11.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance

### ***Response to Arguments***

Applicant's arguments filed 19 August 2005 have been fully considered but they are not persuasive.

Applicant is reminded that during patent examination, the pending claims must be "given the broadest reasonable interpretation consistent with the specification." Applicant always has the opportunity to amend the claims during prosecution, and broad interpretation by the examiner reduces the possibility that the claim, once issued, will be interpreted more broadly than is justified. In re Prater, 415 F.2d 1393, 1404-05, 162 USPQ 541, 550-51 (CCPA 1969).

While the meaning of claims of issued patents are interpreted in light of the specification, prosecution history, prior art and other claims, this is not the mode of claim interpretation to be applied during examination. During examination, the claims must be interpreted as broadly as their terms reasonably allowed. This means that the words of the claim must be given their plain meaning unless applicant has provided a clear definition in the specification. In re Zletz, 893 F.2d 319, 321, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989).

In this instance applicant argues that the prior art of record does not disclose a capacitor sensor (Col. 13, line 30), does not sense a change in the capacitance on a displacement of a probe tip. (Col. 13, lines 9-19) and a capacitance is formed between the suspension mechanism and a the at least one conducting layer (Col.7, lines 5-15)

With regards to the applicant's argument that the Fujiwara et al. (USPN 5,777,977) reference does not anticipate the claimed invention since some the cited portions were cited from the background and no motivation was provided to combine the teaching in the background of the invention and the actual invention. Examiner has cited areas in the actual disclosure of the Fujiwara et al. (USPN 5,777,977) reference therefore the anticipation rejection is deemed proper.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Ikeda et al. (USPN 5,396,066) teaches an displacement element, cantilever probe and information processing apparatus using cantilever probe

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of



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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aditya S Bhat whose telephone number is 571-272-2270. The examiner can normally be reached on M-F 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow can be reached on 571-272-2269. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Aditya Bhat  
October 28, 2005

  
MICHAEL NGHIEM  
PRIMARY EXAMINER